

European Black Alder and other plants in Coal-mine  
Areas of Western Kentucky

Clyde F. Reed

It is always with great interest when one finds numerous 'new' species of plants in an area or areas where he has been several times before. The present incident occurred in Muhlenberg County, Kentucky, in the claimed coal-mine area, especially near Cleaton on Rt. 70. There I found in the gullies and up on the hillsides nearby, hundreds of stately trees up to 30 ft. tall of the European Black Alder (Alnus glutinosa), A species not reported from Kentucky before, to be best of my knowledge. Not far away were various clumps of Russian olive (Elaeagnus sp.).

Down the road at Drakesboro, I sought the good auspices of a photographer and biology teacher, Joanna Fox, who returned with me to Cleaton and took numerous pictures of the Alders there. Some of those pictures are shown below. Miss Fox indicated that on several of her field trips she had recalled seeing this tree at other reclaimed coal-mine sites in Muhlenberg and neighboring counties.

Later, at the Department of Geology at Bowling Green, I obtained a publication, 'Mine Soil Classification and Use'. revised 1980, published by USDA, Soil Conservation Service, Lexington, Kentucky, and the following information seems worthy of repeating here.

'In 1954 the first act regulating the strip mining of coal was passed in Kentucky. During the period from 1954 to 1966 the most significant development was the permitting of surface mining operations and reorganization of the state agency now known as the bureau of Surface Mining Reclamation and Enforcement.' Other bills passed in 1974, 1975 and 1977 provided for other regulations dealing with coal mining operations. For the last 15 years much attention has been given to the identification of strip mine soil, and the types of vegetation which will eventually take hold and grow on reclaimed strip-mine sites.

The main objective in vegetating mine soil is to stabilize the area as quickly as possible with a permanent and protective cover growth. Also, the nature of the area must be taken into consideration when selecting plant species, and to what use the land will eventually be used, as wildlife land, pasture, hayland, recreation or erosion control.

Some of the species used for revegetating mine-soil areas in the western, as well as the eastern, coal areas of Kentucky, include Balbo rye (Secale cereale), Caucasian bluestem (Andropogon caucasicus), Weeping lovegrass (Eragrostis curvula), 'Lathco' flatpea (Lathyrus sylvestris), Japanese fleecflower (Reynoutria japonica), Japanese honeysuckle



Vegetation on reclaimed coal-mine field  
near Cleaton, Kentucky, showing growth of the  
European Black Alder, Poplars, Russian Olive  
and Andropogons

(Lonicera japonica), European Black Alder (Alnus glutinosa), Chinese Chestnut (Castanea mollissima), Scotch Pine (Pinus sylvestris), Short-leaf Pine (Pinus echinata), Pitch Pine (Pinus rigida), Bristly 'Arnot' locust (Robinia fertilis), 'Cardinal' Autumnal Russian Olive (Elaeagnus umbellatus), Tatarian Honeysuckle (Lonicera tatarica), Indigobush (Amorpha fruticosa), Amur 'Rem-red' Honeysuckle (Lonicera maackii), Narrow-leaved Russian Olive (Elaeagnus angustifolia) and Fragrant sumac (Rhus aromatica). Many of the local species are also used for re-seeding the sites. Reseeding is done by hydroseeder sprayers that spray lime, fertilizer, seeds and mulch at the same time, especially on areas likely to be subject to erosion, or by helicopter over areas where seeding-machinery cannot function well.

Much of the acreage at Cleaton (Muhlenberg Co.) which consists of more or less rolling hills, I understand was seeded by helicopter. The broad open areas have the grasses and legumes, the gullies the shrubs and trees, such as the European Black Alder, the two species of Elaeagnus, silky dogwood and green ash (Fraxinus pennsylvanica). Visits to Muhlenberg County and several of the other sixteen counties in the coal fields of western Kentucky where surface coal-mining is permitted revealed about half of these species well-established and now part of the flora. Surely, they rate with kudzu, Japanese honeysuckle and Lespedeza cuneata (elsewhere) and Tracaulon (Polygonum) perfoliatum (which has recently become a noxious weed in Maryland, but is rapidly spreading southward and westward) and Reynoutria japonica, all introduced with good intentions. In the eastern coal-mining area there are about 35 counties allowing surface coal mining. In those I have found Castanea mollissima in about one-third on the reclaimed soils, and most of the pine species listed above. Of course the Lespedeza cuneata, Reynoutria japonica and Lonicera japonica are the most common.

More studies need to be made of the numerous reclaimed coal-mine areas in both eastern and western Kentucky to determine what species have remained perennial on these sites. Of course, some of the grasses used were annuals and will not be found unless they have reseeded themselves every year. Vouchers collected in these areas are in Reed Herbarium.

Research Associate  
Smithsonian Institution  
Washington, D.C. and  
Reed Library and Herbarium  
10105 Harford Road  
Baltimore, Maryland 21234



Relative size of European Black  
Alder as of July 1983 on the reclaimed  
coal-mine field in Muhlenberg County,  
Kentucky